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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/666,063	09/18/2003	Phil Van Dyke	VP088	7683

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EXAMINER
XU, KEVIN K

ART UNIT	PAPER NUMBER
2628	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/11/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

	Application No.	Applicant(s)
Office Action Summary	10/666,063	DYKE ET AL.
	Examiner	Art Unit	
	Kevin K. Xu	2628	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *10 November 2006*.

2a) ☒ This action is **FINAL**.   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-14 and 28-30* is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-14 and 28-30* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a) ☐ All b) ☐ Some * c) ☐ None of:

   1. ☐ Certified copies of the priority documents have been received.

   2. ☐ Certified copies of the priority documents have been received in Application No. _____.

   3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
   Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____ .

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 11/10/06 have been fully considered but they are not persuasive. Specifically applicant has argued that Roever (2003007686) fails to teach "determining when to apply the offset parameter and scale parameter in relation to application of the conversion matrix" Examiner respectfully disagrees. It should be noted that the applicant seems to be equating "determining *when to apply* the offset parameter and scaling parameter" with a strict definition of "*applying the scaling parameter either before or after* the application of conversion matrix." However, "determining *when* an action occurs relative to another event" can be interpreted in said claims to signify "determining *if* an action occurs relative to another event". This is what Roever teaches. (p. 2 paragraphs 24-25) It should be noted that Roever explicitly teaches *optionally scaling* of the image with a scaler configured to use the same multiply-add (scale + offset) of an FIR filter as the color space converter and further multiplexer 140a selects *whether* the input to the FIR filter 140b is from the color-space converter or the scaler and based on *whether* throughput is critical, the system may decide to either convert each input image to select color space and then utilize the scaler or the scaler may be provided only for images that are provided from an RGB source which does not require color space conversion. (p. 2 paragraphs 24-25, Fig. 1) Therefore, Roever explicitly teaches determining when or if to apply offset parameter and scale parameters in relation to the color space conversion.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., providing any means for scaling the image at either the input or output of the color conversion) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). It should be noted that applicant has merely stated that "without guidance of applicant's specification, it out not be obvious to someone skilled in the art to modify Roever and Ulichney" devoid of any further explanation. Examiner respectfully disagrees with applicant's assertion. Ulichney explicitly teaches a conversion matrix, converting YUV to RGB and also teaches selecting both offset parameter and scale parameter associated with YUV format. (Fig. 32, Col 7 line 1- Col 8 line 19). Further Ulichney teaches benefit of determining when (*optionally* applying) offset parameter and scale parameter because due to throughput constraints, the multiplexer (140a) may be configured such that only one function, color space conversion or image scaling may be

applied (e.g. in RGB based system, scaling may be provide only for images that are

provided from an RGB source, which does not require color-space conversion) (p. 2

paragraph 25) and furthermore, controlling the multiplexer so data from converter and

scaler are alternately processed, thereby allowing continuous processing to one input or

the other for the entire process. (p. 3 paragraph 25)

Furthermore, it should be noted that amending current independent claims 1 and

9 to state "**determining application of scaling and offsetting parameter either**

before or after application of conversion matrix" would overcome the current prior

art rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-3, 5-14, 28-30 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Ulichney (5920322) in view of Roever. (20030007686)

Regarding claim 1, Ulichney teaches identifying a first color space format. (Col 2

lines 3-8, Col 6 lines 1-9) It should be noted that the first color space format as taught

by Ulichney is YUV and YUV **must be** identified if the system is to be perform YUV to

RGB dematrixing. Furthermore, Ulichney teaches selecting both an offset parameter

and a scale parameter associated with the first color space format. (Col 17 lines 1-67,

Col 18 lines 45-59, Figs 32, 33A, 34 and 35) It should be noted that the scale

parameter as taught by Ulichney is a slope/steepness variable. Additionally Ulichney

teaches identifying a conversion matrix configured to convert values associated with the

first color space format to a second color space format. (Col 7, lines 1-14 Fig. 32) It

should be noted that the color transform (matrix) as taught by Ulichney is employed by

the color conversion system (Fig. 32) and the second color space format as taught by

Ulichney is RGB. It should be noted that Ulichney teaches applying the offset

parameter and the scale parameter **prior** to application of the conversion matrix for

input YUV values. (Col 17 lines 13-31, Fig. 34) It should be noted the table builder

performs the function of the conversion matrix with constant values set for the

conversion matrix, converting YUV to RGB (Fig. 32, Col 7 line 1- Col 8 line 19).

However, Ulichney does not explicitly teach determining *when* to apply the offset

parameter and scale parameter in relation to application of the conversion matrix. This

is what Roever teaches. (Fig. 1, p. 1 paragraph 6, p. 1 paragraph 13, p. 2 paragraphs

14-15, p. 2 paragraphs 24-25, p. 3 paragraph 30 paragraph 32) It should be noted that

Roever teaches the scaler provides both scaling (multiply) and offsetting (add) (p. 2

paragraph 24) and is *optionally* applied (p. 2 paragraph 24 and Fig. 1) after the color

space converter. Furthermore, it should be noted the color space converter is

configured to employ multiplication and addition components of an FIR filter (e.g. p. 2

paragraph 14) It would have been obvious to one of ordinary skill in the art at the

present time the invention was made to combine the teachings of *optionally* applying

offset parameter and scale parameter (determining when) after application of the

conversion matrix as taught by Roever into the system of Ulichney because due to throughput constraints, the multiplexer (140a) may be configured such that only one function, color space conversion or image scaling may be applied (e.g. in RGB based system, scaling may be provide only for images that are provided from an RGB source, which does not require color-space conversion) (p. 2 paragraph 25) and furthermore, controlling the multiplexer so data from converter and scaler are alternately processed, thereby allowing continuous processing to one input or the other for the entire process. (p. 3 paragraph 25)

Claim 9 is similar in scope to claim 1 except for the recitation of program instructions. Ulichney also teaches this. (Col 17, lines 23-31) Therefore, claim 9 is rejected under similar rationale as claim 1.

Consider claims 2 and 10, Ulichney teaches identifying the first color space format as a YUV based color format and the second color space format as an RGB based color format. (Col 2 lines 3-8, Col 6 lines 1-9) Additionally Ulichney teaches applying the offset parameter and the scale parameter prior to application of the conversion matrix. (Col 17 lines 1-67, Col 18 lines 45-59, Figs 32, 33A, 34 and 35)

Regarding claims 6 and 12, Ulichney teaches adjusting brightness characteristic through a value associated with the offset parameter. (Col 17 lines 5-9)

Regarding claims 7 and 13, Ulichney teaches adjusting color balance through a value associated with the offset parameter. (Col 17 lines 5-9, Col 17 lines 61-66)

Consider claims 8 and 14, Ulichney teaches adjusting a contrast characteristic through a value associated with the scale parameter. (Col 17 lines 5-9, Col 17 lines 42-60)

Regarding claim 3, Ulichney does not explicitly teach identifying the first color space format as an RGB based color format and the second color format as a YUV based color format. This is what Roever teaches (p. 1-2 paragraph 13). It would have been obvious to one ordinary skill in the art at the present time the invention was made to combine the teachings of RGB to YUV color space conversion as taught by Roever into the system of Ulichney because YUV color space monitors human perception of color more closely than RGB for television broadcast. Furthermore, Roever teaches applying the offset parameter and scale parameter after the application of the conversion matrix. (Fig. 1, p. 2 paragraph 24 paragraph 25, p. 3 paragraph 30 paragraph 32) It should be noted that the scaler provides both scaling (multiply) and offsetting (add). (p. 2 paragraph 24) It would have been obvious to one ordinary skill in the art at the present time the invention was made to combine the teachings of applying offset parameter and scale parameter after application of the conversion matrix as taught by Roever into the system of Ulichney because the scaler after color space conversion provides the functionality of optional scaling and offsetting (multiply-add) of the image (p. 2 paragraph 24) and thus, a better final color representation can be achieved.

Claim 11 is similar in scope to claim 3 and thus, rejected under similar rationale.

Consider claim 5, Ulichney teaches defining an other offset parameter. (Col 17, lines 1-12) It should be noted the other offset parameter as taught by Ulichney is brightness. However Ulichney does not explicitly teach applying the other offset parameter after the application of the conversion matrix to the values. This is what Roever teaches. (Fig. 1, p. 2 paragraph 24 paragraph 25, p. 3 paragraph 30 paragraph 32) It would have been obvious to one ordinary skill in the art at the present time the invention was made to combine the teachings of applying offset parameter after application of the conversion matrix in order to apply the other offset parameter because the scaler after color space conversion provides the functionality of optional scaling and offsetting (multiply-add) of the image (p. 2 paragraph 24) and thus, a better final color representation can be achieved.

Regarding claim 28, Ulichney teaches a display. (Fig. 2) However, Ulichney does not explicitly teach a display controller. Examiner takes official notice of the utilization of a display controller is well known in the art. It would have been obvious to one of ordinary skill in the art at the present time the invention was made to utilize a display controller in order to provide the functionality of allowing the user to regulate and/or adjust settings for a display.

Regarding claim 29, Ulichney does not explicitly teach circuitry. Examiner takes official notice of the utilization of circuitry is well known in the art. It would have been obvious to one of ordinary skill in the art at the present time the invention was made to utilize circuitry in order to convert between color space formats because standardized

integrated circuits offer high performance since its small size allows low power logic to

be used at fast switching speeds, and thus more efficient performance is achieved.

Consider claim 30, Ulichney teaches a handheld electronic device (camera). (Col

5, lines 27-32) It should be noted that a camera must have an integrated circuit

incorpated. However Ulichney does not explicitly teach said handheld electronic device

having a LCD display. Examiner takes official notice that handheld electronic devices

can have LCD displays. It would have been obvious to one of ordinary skill in the art at

the present time the invention was made to utilize LCD displays in hand held devices

because LCD displays use small amounts of electric power and is therefore, suitable for

use in battery-powered electronic devices.

Claims 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ulichney

(5920322) in view of Roever (20030007686) in further view of Tanaka. (2003/0132906)

Regarding claim 4, Ulichney teaches outputting data associated with RGB based

color format. (Fig. 2) However, Ulichney does not explicitly teach manipulating color

balance characteristic associated with RGB based color format. This is what Tanaka

teaches. (p. 12 paragraph 208) It would have been obvious to one of ordinary skill in the

art at the present time the invention was made to combine the teachings of

maniplulating color balance associated with RGB into the system of Ulichney with

optional adjustment of offset and scaling of Roever because adjusting gamma

correction to maintain color balance of RGB may control a burning of the screen caused

by a fixed polarization of liquid crystal or orientation film due to remaining DC voltage

that is generated by an unbalance between positive and negative signals (p. 12

paragraph 208) and thus, an improved color representation is achieved.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Kevin K. Xu whose telephone number is 571-272-7747.

The examiner can normally be reached on 8:30AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Mark Zimmerman can be reached on 571-272-7653. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

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system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KX

Kevin Xu

1/3/07

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